

REMARKS

Applicants request favorable reconsideration and allowance of the present application in view of the foregoing amendments and the following remarks.

Claims 1, 10, 19, 28, 29 and 31 are pending in the present application. Claims 1, 10, 19 and 31 are the independent claims. Claims 6-9, 15-18 and 24-27 have been canceled without prejudice.

Claims 1, 10, 19 and 31 have been amended. Applicants submit that support for the amendments can be found in the original disclosure and that no new matter has been added.

Claims 19 and 24-27 were rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 19 has been amended to recite a computer-readable medium. Applicants submit that such subject matter is a statutory article of manufacture and requests withdrawal of the Section 101 rejection.

Claims 1, 6-10, 15-19, 24-29 and 31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Daily U.S. Patent No. 6,317,127 (Daily) in view of Ohshima et al. U.S. Patent No. 6,522,312 (Ohshima) and Zsolt Szalavari, Erik Eckstein, Michael Gervautz, “Collaborative Gaming in Augmented Reality”, Proceedings of VRST’98, pp. 195-204, Taipei, Taiwan (hereinafter Szalavari). Claims 19 and 24-27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Daily in view of Ohshima, Szalavari, Latypov U.S. Patent No. 6,624,853 (Latypov) and Sato U.S. Patent No. 6,445,815 (Sato). Applicants respectfully traverse these rejections for the reasons discussed below.

As recited in independent Claim 1, the present invention is directed to an augmented reality presentation apparatus for superimposing a virtual object in a real space. More specifically, the apparatus of Claim 1 includes both an objective viewpoint augmented reality presentation means and a player's viewpoint augmented reality presentation means. The objective viewpoint augmented reality presentation means (i) senses a video of a real space, where a player experiencing an augmented reality exists, from an objective viewpoint position, (ii) generates a video of a virtual object viewed from the objective viewpoint position, (iii) composes an augmented reality video on the bases of the sensed video of the real space and the generated video of the virtual object, and (iv) displays the composed video on a screen of an observer's display apparatus, which is separate from the head-mounted display worn by any player. On the other hand, the player's viewpoint augmented reality presentation means (i) senses a video of a real space from a player's viewpoint position, (ii) generates a video of a virtual object viewed from the player's viewpoint position, (iii) composes an augmented reality video on the basis of the sensed video viewed from the player's viewpoint position and the generated video of the virtual object from the player's viewpoint position, and (iv) displays the augmented reality video on the screen of a head-mounted display worn by a player.

With these features, a player can view an augmented reality video that includes the real space viewed from the player's viewpoint and a virtual object viewed from the player's viewpoint, while an observer can view an augmented reality video that includes the real space viewed from an objective viewpoint, *which includes the player*, and the virtual object viewed from the objective position.

As presented in the previous amendment, Claim 1 recited a first video sensing means for sensing a video of the real space including a player who is experiencing an augmented reality, from an objective viewpoint position. That feature has now been amended to even more clearly recite that the video sensed by the first video sensing means includes the image of the player. Specifically, Claim 1 now recites a first video sensing means for sensing a video of the real space, where a player experiencing an augmented reality exists, from an objective viewpoint position, *wherein the objective viewpoint position is a fixed position so that the player appears in the video sensed by said first video sensing means.*

Applicants submit that the cited art fails to disclose or suggest at least the above-mentioned features of Claim 1. Daily discloses a system in which a wide field-of-view (FOV) is captured by a fixed fish eye lens or a geodesic array of sensors. That patent teaches extracting an area from the wide FOV, in accordance with an observer's visual axis, and composing the extracted area with a computer-generated (CG) image. However, that patent does not disclose or suggest sensing a video of a real space from an objective viewpoint position, wherein the objective viewpoint position is a fixed position so that a player appears in the video sensed by the first video sensing means. Although in Daily the FOV of one user might overlap with or encompass the *FOV* of another user, there is no disclosure or suggest that any user could actually appear in the video captured by the fixed camera. To the contrary, that patent discloses that the fixed camera is mounted, for example, on the underside of an aircraft (i.e., capturing the view outside the plane so that passengers can see it, but not capturing images of the passengers themselves.)

Applicants submit that the other cited art likewise fails to disclose or suggest at least the above-mentioned features and therefore fails to remedy the deficiencies of Daily. Ohshima relates to a product made by Canon, the assignee of this application, called the AR2Hockey System. In that system, a PC merely display a video sensed by a TV camera 230, not a video obtained by composing a video sensed by the TV camera 230 with a CG image viewed from the TV camera. Svalavari, on the other hand, discloses an arrangement for playing a game using augmented reality. According to that article, Fig. 2 is a view for explaining the outside appearance of a system. However, it is not an image to be presented to an observer. Moreover, Fig. 2 shows an actual image, and therefore a virtual object cannot appear in Fig. 2. Instead, an object held in the hand is an actual object and not a virtual object.

Accordingly, Applicants submit that even if the cited art is considered in combination, it fails to disclose or suggest at least the feature recited in Claim 1 of the first video sensing means for sensing an image of a real space, where a player experiencing an augmented reality exists, from an objective viewpoint position, wherein the objective viewpoint position is a fixed position so that the player appears in the video sensed by the first video sensing means.

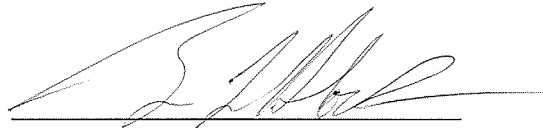
The other independent claims recite features similar to those of Claim 1 discussed above, and those other independent claims are believed patentable for reasons similar to Claim 1. The dependent claims are believed patentable for at least the same reasons as the independent claims, as well as for the additional features they recite.

Request for Interview

Applicants believe that a personal interview will be of value in resolving any remaining issues. Therefore, the Examiner is respectfully requested to contact the Applicants' undersigned representative to schedule an interview.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'B. L. Klock', written over a horizontal line.

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